

EXHIBIT 30

ATTACHMENT 30

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

CISCO SYSTEMS, INC. Case No.: 5:14-cv-05344-BLF (PSG)

Plaintiff,

v.

ARISTA NETWORKS, INC.

Defendants.

* HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY *

VIDEOTAPED DEPOSITION OF KIRK LOUGHEED

Palo Alto, California

Monday, April 4, 2016

Volume 2

Reported by:

LESLIE JOHNSON

RPR, CSR No. 11451

Job No.: 2285024

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CISCO SYSTEMS, INC. Case No.: 5:14-cv-05344-BLF(PSG)	Volume 2
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Plaintiff,	6 BY MR. WONG 197
6	7
v.	8 EXHIBITS
7	9 KIRK LOUGHEED
ARISTA NETWORKS, INC.	10 NUMBER DESCRIPTION PAGE
8	11 Exhibit 452 Copy of name badge; 1 page 198
Defendants.	12 Exhibit 453 Black and white copy of photograph; 198
9	1 page
10	13 Exhibit 454 Patent Agreement; Bates stamped 208
11	KL-00000872 to 891
12	14 Exhibit 455 A Multiple Protocol Kernel for 228
13	Local Area Network Software
14 * HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY *	15 Development Reference Manual; Bates
15	stamped KL-00000001 to 93
16	16
17 VIDEOTAPED DEPOSITION OF KIRK LOUGHEED, Volume 2.	17 Exhibit 456 Document entitled "Chaosnet"; Bates 238
18 taken on behalf of Defendant, at 601 California Avenue,	stamped KL-00000186 to 250
19 Palo Alto, California, beginning at 9:25 a.m. and ending	18 Exhibit 457 Document entitled "Debugging 241
20 at 4:37 p.m., on Monday, April 4, 2016, before	Information"; Bates stamped
21 LESLIE JOHNSON, Certified Shorthand Reporter No. 11451.	KL-00000564-654
22	20 Exhibit 458 DECnet Digital Network Architecture 244
23	(Phase V); Bates stamped
24	KL-00000251 to 380
25	21 Exhibit 459 E-mail from Stanford Low Overhead 252
	Timesharing; Bates stamped
	KL-00001699 to 763
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1 APPEARANCES:	1 EXHIBITS (Cont.)
2	2 KIRK LOUGHEED
3 FOR PLAINTIFF CISCO SYSTEMS, INC.:	3 NUMBER DESCRIPTION PAGE
4 QUINN EMANUEL URQUHART & SULLIVAN LLP	4 Exhibit 460 E-mail dated 10-Jan-83 from Barb 260
5 BY: JOHN (JAY) NEUKOM, ESQ.	at ISL to Computer Committee; Bates
6 50 California Street, 22nd Floor	stamped KL-00000868 to 871
7 San Francisco, California 94111	5 Exhibit 461 Stanford Etherip/Gateway User and 263
8 (415)875-6600	Configuration Guide; Bates stamped
9 johnneukom@quinnemanuel.com	CSI-CLI-01315367 to 97
10 FOR DEFENDANT ARISTA NETWORKS, INC.:	6 Exhibit 462 Letter dated August 21, 1986 from 281
11 KEKER & VAN NEST LLP	Robert L. Street to Len Bosack;
12 BY: RYAN WONG, ESQ.	Bates stamped CSI-CLI-01839502
13 633 Battery Street	to 504
14 San Francisco, California 94111	10 Exhibit 463 E-mail dated 4/3/2006 from Kirk 298
15 (415)391-5400	Lougheed to Vivian Neou; Bates
16 rwong@kvn.com	stamped CSI-CLI-01124245
17 ALSO PRESENT:	11
18 SEAN GRANT, Videographer	12 Exhibit 464 Cisco's Amended Exhibit F; 44 pages 302
19	13
20	14 Exhibit 465 Software Unit External Functional 310
21	Specification; Bates stamped
22	CSI-CLI-00608751 to 752
23	15
24	16 Exhibit 466 ipsupport c -- miscellaneous IP 328
25	support code; 20 pages
	17 Exhibit 467 Document entitled "Part 3: Media 332
	Access Control (MAC) Bridges";
	Bates stamped ARISTANDCA00032440
	to 812
	18
	19 Exhibit 468 Contents of "tip" directory; 1 page 348
	20
	21 Exhibit 469 Command! c -- ASM/AGS commands; 355
	Bates stamped KL-SC-00000001 to 9
	22 Exhibit 470 Config c -- parse and act upon 358
	configuration commands; Bates
	stamped KL-SC-00000010 to 20
	23 Exhibit 471 Exec.c -- ASM/AGS command level; 365
	Bates stamped KL-SC-000000021 to 32
	24
	25
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1	EXHIBITS (Cont.)	1	THE VIDEOGRAPHER: Thank you. Will the
2	KIRK LOUGHEED	2	certified court reporter please swear in the
3	NUMBER DESCRIPTION PAGE	3	witness.
4	Exhibit 472 "cisco.e" source code; 1 page 371	4	
5	Exhibit 473 "stanford.c" source code; 1 page 371	5	KIRK LOUGHEED,
6	Exhibit 474 Source code: Bates stamped 375	6	having been administered an oath, was examined and
7	KL-SC-00000033 to 41	7	testified as follows:
8	Exhibit 475 Source code: Bates stamped 375	8	
9	KL-SC-00000042 to 52	9	EXAMINATION (RESUMED)
10	Exhibit 476 Cisco Systems ASM/AGS User Manual 383	10	BY MR. WONG:
11	and Configuration Guide; Bates	11	Q. Good morning, Mr. Lougheed.
12	stamped CSI-CLI-00358622 to 54	12	A. Good morning.
13	***	13	Q. Mr. Lougheed, do you understand that this
14		14	is a continuation of your personal deposition that
15		15	was taken back on November 20th, 2015?
16		16	A. I do.
17		17	Q. And do you understand that you are still
18		18	testifying under oath as if you were testifying at
19		19	trial?
20		20	A. I do.
21		21	Q. And is there any reason why you cannot
22		22	give full and truthful testimony today?
23		23	A. There is no reason.
24		24	Q. And are you generally still familiar with
25		25	the ground rules for a deposition?
Page 195		Page 197	
1	Palo Alto, California, Monday, April 4, 2016	1	A. Yes.
2	9:25 a.m.	2	Q. Okay. Well, I'll just repeat some of the
3		3	more important rules. If you need to take a break
4	THE VIDEOGRAPHER: Good morning. We're on	4	at any time, just let me know. And all I'd ask is
5	the record. The time is 9:25 a.m., and the date is	5	that if there is a question pending, that you answer
6	April 4th, 2016. This begins Volume 2 of the	6	it before we go on the break. Okay?
7	videotaped deposition of Mr. Kirk Lougheed. My name	7	A. (Witness nods head.)
8	is Sean Grant, here with our court reporter, Leslie	8	MR. WONG: Why don't we mark this as the
9	Johnson. We're here from Veritext Legal Solutions	9	first exhibit for today.
10	at the request of counsel for Defendant. This	10	(Exhibit 452 marked for identification.)
11	deposition is being held at Wilson Sonsini in Palo	11	MR. WONG: And we will mark this one as
12	Alto, California. The caption of this case is	12	the next exhibit.
13	"Cisco Systems Inc. versus Arista Networks Inc.,"	13	(Exhibit 453 marked for identification.)
14	Case No. 5:14-cv-05344-BLF.	14	MR. NEUKOM: Ryan, I have two separate
15	Please note that audio and video recording	15	pieces of paper. Are you treating these as two
16	will take place unless all parties have agreed to go	16	separate exhibits?
17	off the record. Microphones are sensitive and may	17	MR. WONG: Yes. I'm going to give them
18	pick up whispers, private conversations or cellular	18	two exhibit numbers and read them into the record in
19	interference.	19	just a second.
20	At this time, will counsel please identify	20	The court reporter has marked as
21	themselves and state whom they represent.	21	Exhibit 452 a photocopy -- photo bearing Bates Nos.
22	MR. WONG: Ryan Wong from Keker & Van Nest	22	KL-00002202. The court reporter has also marked as
23	for Defendant Arista Networks.	23	Exhibit 453, a black and white photo with Bates Nos.
24	MR. NEUKOM: John Neukom for the plaintiff	24	KL-00002201.
25	and also today for the witness.	25	////
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<p>1 A. A type of computer manufactured by the 2 Digital Equipment Corporation. 3 Q. And Digital Equipment Corporation is also 4 known as DEC, right? 5 A. Correct. 6 Q. And did you work with these DEC VAX 7 super-minicomputers while an employee at Stanford? 8 A. One of the -- actually, at least two of 9 the systems programmers were the ones that were 10 primarily responsible for making sure that those 11 systems ran properly. 12 Q. Was Mr. Satz one of those systems 13 programmers that -- 14 A. Yes. 15 Q. -- worked with the VAX system? 16 A. Yes. 17 Q. Is the answer the same for the VAX-11/750 18 super-minicomputers? 19 A. Yes. 20 Q. Did those VAX machines have a command-line 21 interface? 22 MR. NEUKOM: Objection. Vague. 23 BY MR. WONG: 24 Q. Did the VAX-11/780 systems have a 25 command-line interface?</p> <p style="text-align: right;">Page 223</p>	<p>1 Q. And the first full sentence of that bullet 2 point says, "Supervised a computer science 3 department electronics design engineer in the 4 hardware debugging of a DEC-20 to ethernet 5 interface." 6 The next sentence says, "I also wrote the 7 interface's control microcode, the hardware 8 diagnostics, and the operating system support for 9 the device." 10 Do you see that? 11 A. I do. 12 Q. Is that referring to the EtherTIP 13 software? 14 A. No. 15 Q. What is that referring to? 16 A. That's referring to the Massbus-Ethernet 17 Interface Subsystem. 18 Q. And that's also reflected with the acronym 19 MEIS, correct? 20 A. Yes. 21 Q. Did Cisco use any of the software for the 22 MEIS? 23 A. No. 24 Q. Can you go to the page ending with Bates 25 No. 888 in Exhibit 454.</p> <p style="text-align: right;">Page 225</p>
<p>1 MR. NEUKOM: Objection. Vague. 2 THE WITNESS: Yes. 3 BY MR. WONG: 4 Q. Were you familiar with how the VAX 5 command-line interface operated? 6 A. VAX is the name of a piece of hardware 7 that would run an operating system. 8 Q. Thank you. 9 What is the operating system that the VAX 10 hardware ran? 11 A. At Stanford there were two possibilities, 12 something called VAX VMS, and there was also 13 Berkeley UNIX. 14 Q. Is Berkeley UNIX the same as BSD? 15 A. Yes. 16 Q. Were you familiar with the VAX VMS 17 command-line interface? 18 A. No. 19 Q. Were you familiar with the Berkeley UNIX 20 command-line interface? 21 A. Yes. 22 Q. The last bullet point on the page ending 23 in 886 of Exhibit 454, do you see that? It starts 24 with "Supervised a computer science department." 25 A. Yes, I see that paragraph.</p> <p style="text-align: right;">Page 224</p>	<p>1 A. Uh-huh. Yes. I'm on that page. 2 Q. The first bullet point, or I guess the 3 only bullet point on this page starts with "Acted as 4 Stanford contact." 5 Do you see that? 6 A. Yes, I see that paragraph. 7 Q. Is it true that you acted as Stanford 8 contact with DEC for field testing of two new 9 releases of the DEC-20 operating system? 10 A. Let me finish the paragraph so I can 11 establish context. 12 Q. Sure. Please take your time. 13 A. Okay. I've read the paragraph. Your 14 question is? 15 Q. Is it true you that you acted as the 16 Stanford contact with Digital Equipment Corporation 17 for field testing two new releases of the DEC-20 18 operating system? 19 A. Yes. 20 Q. Is the DEC 20 operating system the same 21 thing as the TOPS-20 operating system? 22 A. Yes. 23 Q. Further down on this same page ending with 24 control numbers 888 on Exhibit 454, there's a 25 section called "Special Skills Knowledge or Training</p> <p style="text-align: right;">Page 226</p>

<p>1 Required Including Tools or Equipment Used."</p> <p>2 Do you see that?</p> <p>3 A. I see that.</p> <p>4 Q. And one sentence underneath that heading</p> <p>5 says "Familiarity with the hardware and protocols</p> <p>6 used in local area networks in (ethernet) and</p> <p>7 long-haul national networks (ARPANET)."</p> <p>8 Do you see that?</p> <p>9 A. I see that sentence.</p> <p>10 Q. Did I read that correctly?</p> <p>11 A. You did.</p> <p>12 Q. What protocols were you familiar with as</p> <p>13 of May 6th, 1985 that were used in local area</p> <p>14 networks?</p> <p>15 A. There -- ethernet, even in 1985 had many.</p> <p>16 many protocols. You could run PUP or Park Universal</p> <p>17 Packet. You could run PCPIP. You could run XNS.</p> <p>18 You could run -- by that time, pretty much any</p> <p>19 network protocol would run on an ethernet.</p> <p>20 Q. Was address resolution protocol a protocol</p> <p>21 that was used in local area networks?</p> <p>22 A. On ethernets, yes.</p> <p>23 Q. You can put that document aside.</p> <p>24 MR. WONG: Let's mark this one as</p> <p>25 Exhibit 455, please.</p> <p style="text-align: right;">Page 227</p>	<p>1 MR. NEUKOM: Objection. The question is</p> <p>2 phrased in the hypothetical.</p> <p>3 MR. WONG: Let me rephrase the question so</p> <p>4 it's not hypothetical.</p> <p>5 BY MR. WONG:</p> <p>6 Q. Did you obtain the document marked as</p> <p>7 Exhibit 455 before you left Stanford in July of</p> <p>8 1986?</p> <p>9 A. I believe so.</p> <p>10 Q. Do you remember if you obtained the</p> <p>11 document marked as Exhibit 455 directly from</p> <p>12 Mr. Yaeger?</p> <p>13 A. I have no memory of now I actually</p> <p>14 obtained this document.</p> <p>15 Q. Were documents -- strike that.</p> <p>16 Was the document marked as Exhibit 455</p> <p>17 available for you to get, besides going directly</p> <p>18 through Mr. Yaeger?</p> <p>19 MR. NEUKOM: Objection. Vague.</p> <p>20 THE WITNESS: I don't have a memory of how</p> <p>21 I actually obtained it. I -- these -- such</p> <p>22 documents were certainly easily obtainable at</p> <p>23 Stanford University.</p> <p>24 BY MR. WONG:</p> <p>25 Q. When you say such documents like</p> <p style="text-align: right;">Page 229</p>
<p>1 (Exhibit 455 marked for identification.)</p> <p>2 BY MR. WONG:</p> <p>3 Q. The court reporter has marked as</p> <p>4 Exhibit 455 a document bearing control numbers KL</p> <p>5 00000001 to 93.</p> <p>6 Mr. Lougheed, do you recognize the</p> <p>7 document marked as Exhibit 455?</p> <p>8 A. I recognize what it is. I don't believe I</p> <p>9 have read it before.</p> <p>10 Q. Okay. You say you recognize what it is.</p> <p>11 What is the document marked as Exhibit 455?</p> <p>12 A. It appears to be a reference manual for</p> <p>13 Bill Yaeger's software that he developed under the</p> <p>14 SUMEX project.</p> <p>15 Q. And this was produced from your personal</p> <p>16 files, correct, Exhibit 455?</p> <p>17 A. Yes.</p> <p>18 Q. Why did you have the document marked as</p> <p>19 Exhibit 455 in your personal files?</p> <p>20 A. It seemed to me to be of -- whenever I</p> <p>21 obtained it, it seemed to me to be of at least</p> <p>22 historical interest.</p> <p>23 Q. Would you have obtained the document</p> <p>24 marked as Exhibit 455 before you left Stanford in</p> <p>25 July of 1986?</p> <p style="text-align: right;">Page 228</p>	<p>1 Exhibit 455 were easily obtainable at Stanford</p> <p>2 University, how were these documents easily</p> <p>3 obtainable?</p> <p>4 A. It was a community where -- it was a</p> <p>5 research community where research reports, if you</p> <p>6 wanted them, you could -- you could ask around for</p> <p>7 them.</p> <p>8 Q. Now, you said you weren't sure if you had</p> <p>9 read the document marked as Exhibit 455, correct?</p> <p>10 A. I have no --</p> <p>11 MR. NEUKOM: Objection. Misstates prior</p> <p>12 testimony.</p> <p>13 THE WITNESS: I have no memory of reading</p> <p>14 this before. I may have. I may not have. I have</p> <p>15 no memory.</p> <p>16 BY MR. WONG:</p> <p>17 Q. Were you familiar with the functionality</p> <p>18 of the SUMEX software that Mr. Yaeger wrote while at</p> <p>19 Stanford?</p> <p>20 A. Yes.</p> <p>21 Q. Were you familiar with how the command</p> <p>22 parser worked in the SUMEX software that Mr. Yaeger</p> <p>23 wrote?</p> <p>24 A. At one point I certainly was.</p> <p>25 Q. Were you familiar with how the command</p> <p style="text-align: right;">Page 230</p>

<p>1 Q. And was Exhibit 456 a document that was in 2 your personal files? 3 A. Yes, it was. 4 Q. Okay. And why did you have this CHAOS net 5 document marked as Exhibit 456 in your personal 6 files? 7 A. Because in 1987, at the request of some 8 customers, we added CHAOS net to the Cisco router 9 software. A consultant named Eric Weaver actually 10 did the -- I believe it was Eric Weaver did the 11 actual implementation in the Cisco software. He was 12 a contractor for us. 13 Q. Okay. So your possession of the document 14 marked as Exhibit 456 was in connection with work 15 that Cisco did with respect to CHAOS net? 16 A. Correct. I suspect this was the document 17 I handed him to say I want this in the router. 18 Q. Did you ever read the document marked as 19 Exhibit 456 before you handed it to Mr. Weaver? 20 A. I may have. 21 Q. Can you turn to page 17 of Exhibit 456. 22 The control number at the bottom ends in 206. Let 23 me know when you're there, please. 24 A. Okay. I'm on page -- page 17 of the CHAOS 25 net document.</p> <p style="text-align: right;">Page 239</p>	<p>1 Q. Did you come up with the term "flow 2 control"? 3 A. No. You're doing a bit of random word 4 matching. 5 Q. Yes. Random questioning is definitely my 6 style. 7 You can set that document aside. 8 MR. WONG: Let's mark this one as the next 9 exhibit, please. 10 (Exhibit 457 marked for identification.) 11 BY MR. WONG: 12 Q. The court reporter has marked as 13 Exhibit 457 a document bearing control numbers 14 KL-00000564 to 654. 15 And Mr. Loughheed, take your time to look 16 at Exhibit 457. But my question to you is, do you 17 recognize the document marked as Exhibit 457? 18 A. There is no title to this document, other 19 than Chapter 1. It appears to be -- have to do with 20 DEC-20 hardware. So I don't -- I do not recognize 21 where this document came from. 22 Q. Okay. I'll represent to you that this 23 document was produced to us without a cover page. 24 So this is -- this is the document that was produced 25 to us.</p> <p style="text-align: right;">Page 241</p>
<p>1 Q. And the first -- strike that. At the top 2 of this page ending in control numbers 206 of 3 Exhibit 456, it says "3.8 Flow and Error Control." 4 Do you see that? 5 A. Yes. 6 Q. Do you understand what flow control is, 7 Mr. Loughheed? 8 A. In a general sense. 9 Q. Can you please explain to me what flow 10 control means in a general sense. 11 A. How you put packets onto the network and 12 what speed, rate that you -- and under what 13 conditions you put the packets onto the network. 14 That's my general understanding. I'm not sure -- 15 every protocol has its own nuances, so -- and I have 16 not read the rest of this page, so . . . 17 Q. Understood. 18 When you say every protocol has its own 19 nuances, do you mean that every protocol has its own 20 nuances for flow control? 21 A. Pretty much. 22 Q. When was -- strike that. 23 Do you know when the term "flow control" 24 was first used in the networking industry? 25 A. No.</p> <p style="text-align: right;">Page 240</p>	<p>1 Do you have any doubt that this document 2 was in your personal files that you handed over to 3 Cisco's counsel? 4 A. I don't doubt that. 5 Q. Do you know when you came into possession 6 of the TOPS-20 document marked as Exhibit 457? 7 A. Probably while I was working at Stanford, 8 if this indeed came from the contents of the boxes 9 in my garage. 10 Q. Mr. Loughheed, did you give the documents 11 that were in your garage to your counsel after the 12 first deposition took place? 13 A. There were -- yes. 14 Q. Was there anything else besides documents 15 that were stored in your garage that you provided to 16 your counsel after the first deposition of you? 17 Anything besides paper documents that you found in 18 your garage? Did you provide any other documents to 19 your counsel after your first deposition? 20 A. Just paper documents. 21 Q. Did you have -- strike that. 22 While you were working at Stanford and 23 before you left to join Cisco in July of 1986, did 24 you have TOPS-20 user manuals in your possession? 25 MR. NEUKOM: Objection. Vague.</p> <p style="text-align: right;">Page 242</p>

<p>1 A. Yes.</p> <p>2 Q. Do you know when a spanning tree is?</p> <p>3 A. Yes, I do.</p> <p>4 Q. What is a spanning tree?</p> <p>5 A. A spanning tree is a --</p> <p>6 MR. NEUKOM: Objection. Calls for</p> <p>7 opinion.</p> <p>8 THE WITNESS: It's a graph imposed on the</p> <p>9 network to ensure that packets that are being</p> <p>10 bridged do not get into loops as they are being</p> <p>11 transmitted by bridges.</p> <p>12 BY MR. WONG:</p> <p>13 Q. And is that the function that is served by</p> <p>14 a spanning tree?</p> <p>15 MR. NEUKOM: Objection. Calls for opinion</p> <p>16 testimony, and the question is phrased in the</p> <p>17 hypothetical or abstract.</p> <p>18 BY MR. WONG:</p> <p>19 Q. Let me ask the question differently,</p> <p>20 Mr. Loughheed.</p> <p>21 What is the function served by a spanning</p> <p>22 tree?</p> <p>23 MR. NEUKOM: Same objections.</p> <p>24 THE WITNESS: The spanning tree is</p> <p>25 essentially a data structure -- in effect is a data</p> <p style="text-align: right;">Page 251</p>	<p>1 Q. And the Stanford low overhead</p> <p>2 time-sharing, is that also -- does that also use the</p> <p>3 acronym LOTS?</p> <p>4 A. Yes.</p> <p>5 Q. If you turn to the first page of</p> <p>6 Exhibit 459, the Bates number ends in 1700. Let me</p> <p>7 know when you're there.</p> <p>8 A. Okay.</p> <p>9 Q. There is a -- I guess this is an e-mail at</p> <p>10 the top of the page ending in Bates Nos. 1700,</p> <p>11 correct? Is that an e-mail at the top of the page</p> <p>12 ending in Bates No. 1700?</p> <p>13 A. Yeah.</p> <p>14 Q. And there's a CC there to b.bombadil? Do</p> <p>15 you see that?</p> <p>16 A. Right.</p> <p>17 Q. Is that your e-mail address?</p> <p>18 A. That was my -- that was my user ID at the</p> <p>19 LOTS computer facility.</p> <p>20 Q. Okay. So where "b.bombadil" appears in</p> <p>21 Exhibit 459, that is your user ID, correct?</p> <p>22 A. Correct.</p> <p>23 Q. What does the "B" stand for for the</p> <p>24 b.bombadil?</p> <p>25 A. So in the -- in 1976, when they set up the</p> <p style="text-align: right;">Page 253</p>
<p>1 structure that allows bridges and other things that</p> <p>2 forward at the MAC layer -- it tells them which</p> <p>3 ports they should not forward packets on.</p> <p>4 BY MR. WONG:</p> <p>5 Q. When did first hear of the term "spanning</p> <p>6 tree"?</p> <p>7 A. During my -- during Cisco. Probably late</p> <p>8 '80s.</p> <p>9 Q. You can set that document aside.</p> <p>10 MR. WONG: Let's have that marked as the</p> <p>11 next exhibit, please.</p> <p>12 (Exhibit 459 marked for identification.)</p> <p>13 BY MR. WONG:</p> <p>14 Q. The court reporter has marked as</p> <p>15 Exhibit 459 a document bearing control numbers</p> <p>16 KL-00001699 to 1763.</p> <p>17 Mr. Loughheed, please take a moment to look</p> <p>18 at Exhibit 459 and let me know -- well, and my first</p> <p>19 question to you will be, do you recognize</p> <p>20 Exhibit 459?</p> <p>21 A. Yes.</p> <p>22 Q. And what is Exhibit 459?</p> <p>23 A. It's a computer listing of my e-mail while</p> <p>24 I was working at the Stanford low overhead</p> <p>25 time-sharing.</p> <p style="text-align: right;">Page 252</p>	<p>1 student computing facility, they needed to support</p> <p>2 several thousand users, and the operating system had</p> <p>3 a limitation that it could only support some number</p> <p>4 smaller than the total number of students. So what</p> <p>5 they did was they created top level directories A</p> <p>6 through Z, and then the dot indicates that there is</p> <p>7 a subdirectory or, you know, a subuser of that. So</p> <p>8 everybody's user ID had the initial letter, dot</p> <p>9 username.</p> <p>10 Q. Understood. I was wondering why it wasn't</p> <p>11 T. Bombadil. But I'm assuming the Bombidel refers</p> <p>12 to --</p> <p>13 A. The Tolkien character.</p> <p>14 Q. Yes.</p> <p>15 THE REPORTER: To what character?</p> <p>16 THE WITNESS: Tolkien. As in Lord of the</p> <p>17 Rings. Or actually, as in the Hobbit. No.</p> <p>18 Actually, it's Lord of the Rings.</p> <p>19 BY MR. WONG:</p> <p>20 Q. I think it's Lord of the Rings.</p> <p>21 A. What can I say? I was an undergraduate.</p> <p>22 I was stuck with that same username.</p> <p>23 Q. I would have chosen Radagast.</p> <p>24 Are you aware of the e-mail alias at Cisco</p> <p>25 called Clueless@Cisco.com?</p> <p style="text-align: right;">Page 254</p>

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

23 Q. You can put that aside.

24 MR. WONG: Let's mark this as 460, please.

25 (Exhibit 460 marked for identification.)

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1 is the document ending in control numbers 870,
2 correct?
3 A. Correct.
4 Q. And the memo from Mr. Hansen to you is the
5 document ending in Bates Nos. 871, correct?
6 A. Correct.
7 Q. All right. And the e-mail to the computer
8 committee that you mentioned is the document with
9 control numbers 868 to 869, correct?
10 A. Right. Correct.
11 Q. Looking at the e-mail on the page with
12 control numbers 868 on Exhibit 460.
13 A. Uh-huh.
14 Q. About close to halfway down, there is a
15 paragraph that starts with the word "name."
16 Do you see that?
17 A. Yes, I see that paragraph.
18 Q. And it says "Name. A competition was
19 announced on B-Board. Of several names and
20 acronyms, SIERRA (suggested by Nowicki) seemed to
21 gather the most favor."
22 Do you see that?
23 A. I see that.
24 Q. What is that naming competition for?
25 A. So earlier, the department of computer

[illegible]

Page 275

[illegible]

Page 283

Page 295

[illegible]

Page 296

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
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17 MR. WONG: Let's mark this one as the next
18 in order.
19 (Exhibit 463 marked for identification.)
20 BY MR. WONG:
21 Q. The court reporter has marked Exhibit 463,
22 a document bearing control number CSI-CLI-01124245.
23 Mr. Lougheed, please take a moment to look
24 at Exhibit 463 and let me know when you're done.
25 A. Okay. I've read it.

<p>1 BY MR. WONG:</p> <p>2 Q. Can access lists be associated with</p> <p>3 different routing protocols?</p> <p>4 A. Yes.</p> <p>5 MR. NEUKOM: Objection. Calls for opinion</p> <p>6 testimony.</p> <p>7 BY MR. WONG:</p> <p>8 Q. Yes, right?</p> <p>9 A. We have implemented such in the past.</p> <p>10 Q. What other routing protocols have -- for</p> <p>11 what -- strike that.</p> <p>12 For what other routing protocols have you</p> <p>13 implemented access lists?</p> <p>14 A. I'll have to think carefully about this.</p> <p>15 XNS, Banyan VINES, I believe. I'd have to go refer</p> <p>16 to the Cisco documentation, but I know that we did</p> <p>17 have access lists for a number of network protocols.</p> <p>18 MR. WONG: Just for the court reporter's</p> <p>19 knowledge, did you say Banyan VINES?</p> <p>20 THE WITNESS: Banyan VINES. B-A-N-Y-A-N,</p> <p>21 and then VINES, as in --</p> <p>22 MR. NEUKOM: Red vines.</p> <p>23 THE WITNESS: As in red vines. Okay.</p> <p>24 BY MR. WONG:</p> <p>25 Q. As in a banyan tree?</p> <p style="text-align: right;">Page 315</p>	<p>1 Q. When you added the "ip access-group"</p> <p>2 command, did you consider using a different term</p> <p>3 other than "IP"?</p> <p>4 A. I do not recall whether we had switched</p> <p>5 everything to the IP's hierarchy then. I'd have to</p> <p>6 refer to the documentation to see whether or not we</p> <p>7 actually had an IP hierarchy or whether we assumed</p> <p>8 everything was IP.</p> <p>9 Q. I understand. If there had been an IP</p> <p>10 hierarchy already implemented at the time you added</p> <p>11 the "ip access-group" command would you have</p> <p>12 considered any other term besides "IP" in the "ip</p> <p>13 access-group" command?</p> <p>14 MR. NEUKOM: Objection. Calls for</p> <p>15 speculation, and the question poses a hypothetical.</p> <p>16 THE WITNESS: I could have perhaps</p> <p>17 inverted the hierarchy. I'm sorry. The question is</p> <p>18 again?</p> <p>19 BY MR. WONG:</p> <p>20 Q. You testified that you weren't sure</p> <p>21 whether or not there had been an IP hierarchy</p> <p>22 implemented at the time you added this "ip</p> <p>23 access-group" command?</p> <p>24 A. Right.</p> <p>25 Q. Assuming you checked and there was already</p> <p style="text-align: right;">Page 317</p>
<p>1 A. A banyan tree.</p> <p>2 Q. So the "IP" word in the "ip access-group"</p> <p>3 command is meant to indicate that the access groups</p> <p>4 are for the IP protocol, correct?</p> <p>5 A. It is an indication that that command</p> <p>6 applies to the IP -- into the IP hierarchy of the</p> <p>7 interface command.</p> <p>8 Q. So if you were implementing access groups</p> <p>9 for the XNS protocol, it would be "XNS</p> <p>10 access-group," right?</p> <p>11 A. Yes.</p> <p>12 Q. Have you had -- strike that.</p> <p>13 Did you come up with the term "access</p> <p>14 group" in 1989?</p> <p>15 A. That was the command expression I chose.</p> <p>16 Q. Well, was it the first -- had you heard of</p> <p>17 the term "access group" at the time that you added</p> <p>18 this command to the Cisco IOS?</p> <p>19 A. No, I hadn't. I had previously</p> <p>20 implemented an "access class" command associated --</p> <p>21 for associating an access list with a terminal line.</p> <p>22 And I needed something to associate it with an</p> <p>23 interface. And I was -- I just needed something</p> <p>24 different. And that was the best I could come up</p> <p>25 with that day.</p> <p style="text-align: right;">Page 316</p>	<p>1 an IP hierarchy in existence when you added the "ip</p> <p>2 access-group" command, would you have changed the</p> <p>3 first word to be anything other than "IP"?</p> <p>4 A. Given that I had made the -- made the</p> <p>5 choice of "IP" as the keyword indicating Internet</p> <p>6 protocol-related stuff, I would have felt</p> <p>7 constrained to use that as the leading keyword.</p> <p>8 Otherwise, it would be a seemingly asymmetric</p> <p>9 construction in the hierarchy.</p> <p>10 Q. How long did it take you to come up with</p> <p>11 the ""ip access-group"" command syntax?</p> <p>12 A. Not very long. All I needed was some sort</p> <p>13 of keyword that had "access" in it and something</p> <p>14 after it to distinguish it between class and list.</p> <p>15 And as I said earlier, that was the best I could</p> <p>16 come up with that day. I wasn't necessarily</p> <p>17 terribly happy about it. It was not a terribly</p> <p>18 descriptive command, as far as I was concerned.</p> <p>19 Q. When you say "not very long," are you</p> <p>20 talking about a matter of minutes?</p> <p>21 A. Yep.</p> <p>22 Q. How long -- did you write the source code</p> <p>23 for the "ip access-group" command?</p> <p>24 A. For the original, yes.</p> <p>25 Q. How long did it take you to write the</p> <p style="text-align: right;">Page 318</p>

<p>1 source code for the original "ip access-group" 2 command? 3 A. So writing it for that command would have 4 been part of writing the entire functionality of 5 putting access lists onto interfaces, I guess on the 6 order of a day. 7 Q. If you turn to page 20 on Exhibit 464. 8 Let me know when you're there. 9 A. Okay. I'm on page 20. 10 Q. The second to the top command is 11 "mac-address." 12 Do you see that? 13 A. Uh-huh. 14 Q. Are you the originator of the 15 "mac-address" command? 16 A. Yes. 17 Q. How do you know that you're the originator 18 of the "mac-address" command? 19 A. I remember the problem that I was solving 20 that I needed that sort of functionality. 21 Q. What was the problem that you were trying 22 to solve by the "mac-address" command? 23 A. I needed to send packets on a serial line 24 that actually -- which a serial line does not have 25 MAC addresses, but I needed to somehow get a MAC</p> <p style="text-align: right;">Page 319</p>	<p>1 But to your knowledge, MAC is an 2 industry-standard term defined either on OSI or the 3 IEEE? 4 MR. NEUKOM: Objection. Vague. Calls for 5 opinion. 6 BY MR. WONG: 7 Q. Correct? 8 A. I believe at least IEEE has used the term 9 "MAC address." 10 Q. And at the time that you added the 11 "mac-address" command to Cisco IOS, had the IEEE, to 12 your knowledge, already started using the term "MAC 13 address"? 14 A. Yes. 15 Q. How long did it take you -- strike that. 16 How long did it take you to come up with 17 the syntax for the "mac-address" command? 18 A. I don't remember how long. I suspect it 19 was less than a day. 20 Q. Why do you say that? 21 A. I tend to make decisions quickly. 22 Q. How long did it take you to write the 23 source code for the functionality associated with 24 the "mac-address" command? 25 A. It was probably the same day.</p> <p style="text-align: right;">Page 321</p>
<p>1 address associated with that particular serial line. 2 Q. Was that related to a client request? 3 A. Yes. I don't remember the exact customer 4 or the details to it. 5 Q. Do you remember if the customer suggested 6 you calling the command "mac-address"? 7 A. I don't remember if the customer suggested 8 anything in that particular -- in that particular 9 instance. 10 Q. And is the function of the "mac-address" 11 command to associate a MAC address with a particular 12 serial line? 13 A. It could be a serial line. It could be 14 actually any interface. It would depend what 15 protocols are running across the interface as to 16 what it would do. 17 Q. And what is -- strike that. 18 The MAC part of the words "mac-address," 19 that refers to media access control, correct? 20 A. Yes. 21 Q. And we talked about that media access 22 control being a layer defined by OSI, correct? 23 A. I think we were wondering whether it was 24 OSI or IEEE. 25 Q. Thank you.</p> <p style="text-align: right;">Page 320</p>	<p>1 Q. Did you ever consider a command syntax 2 without the hyphen between "mac" and "address"? 3 A. Stylistically, I prefer dashes as opposed 4 to cramming the words together. I like commands 5 that have an English-like flavor to them. And I 6 detest periods in commands and underscores. So this 7 was . . . 8 Q. Did you ever consider two -- let me strike 9 that. 10 Do you know what a token is in the context 11 of a command? 12 A. Yes. 13 Q. Did you ever consider a command syntax of 14 "mac address"? 15 A. I don't recall if I did. 16 Q. What impact would it have, if any, on the 17 user if -- strike that. 18 Would the CLI behave differently if the 19 command was "mac address," as opposed to 20 "mac-address"? 21 MR. NEUKOM: Objection. Hypothetical 22 question. 23 THE WITNESS: Well, it behaves differently 24 in that instead of one token, there's two tokens. 25 So there would be that.</p> <p style="text-align: right;">Page 322</p>

<p>1 but for different protocols, then it was a very easy 2 generalization. 3 Q. So a matter of minutes? 4 A. Once the decision had been made to do 5 that, yes. 6 Q. What do you think is creative about the 7 command "show ip route"? 8 MR. NEUKOM: Objection. Calls for opinion 9 and legal conclusion. 10 THE WITNESS: So for the "route" command, 11 I originally needed some way of saying -- what I 12 needed was a way of indicating to the software that 13 if I had a packet destined for a particular network, 14 which is the first argument, that I send it to a 15 particular IP address, which is the IP address of a 16 router. And one of those list of network and router 17 pairs may actually be the default, if I didn't find 18 a network mentioned anywhere and couldn't figure out 19 what to do with it. Otherwise, send it to this 20 particular router or gateway. Those are the pieces 21 of information that I needed, and I just -- I chose 22 the name "route." And "IP route" came along 23 afterwards. 24 BY MR. WONG: 25 Q. Are you the originator of the "show</p> <p style="text-align: right;">Page 331</p>	<p>1 BY MR. WONG: 2 Q. The court reporter has marked Exhibit 467, 3 a document bearing control numbers 4 ARISTANDCA00032440 to 32812. 5 And my only question for you, 6 Mr. Lougheed, on this document marked as Exhibit 467 7 is, is this one of the ANSI/IEEE standards that 8 defines a spanning tree? 9 MR. NEUKOM: Objection. Vague. Also 10 calls for opinion testimony. And to the extent that 11 you can find a way to answer this question insofar 12 as the task is an assessment of a document which is 13 double-sided, still over an inch thick, and appears 14 to have -- 15 THE WITNESS: 10-point font. 16 MR. NEUKOM: And appears to have about 350 17 pages. And that's right, size 6 font, size 8 font. 18 It's an unreasonable question on its face. 19 BY MR. WONG: 20 Q. Let me ask it this way, Mr. Lougheed. 21 At the top of page 467, top right, you see 22 it says "1998 edition," right? 23 A. Yes. 24 Q. Have you seen IEEE/ANSI standards before? 25 A. Yes.</p> <p style="text-align: right;">Page 333</p>
<p>1 spanning-tree" command? 2 A. Yes, I am. 3 Q. What is a spanning tree? 4 A. My testimony earlier in the day addresses 5 that question. 6 Q. So thank you. 7 And your explanation of what is a spanning 8 tree earlier in today's deposition would be the same 9 for my question regarding the "show spanning-tree" 10 command; is that correct? 11 A. Right. 12 Q. And what functionality does the "show 13 spanning-tree" command perform? 14 A. It displayed global parameters having to 15 do with the spanning tree and interface-specific 16 parameters having to do with the spanning tree on 17 the box. 18 Q. And the term "spanning tree," you didn't 19 come up with that, right, Mr. Lougheed? 20 A. No, I didn't. 21 Q. The term "spanning tree" is used in 22 ANSI/IEEE standards, correct? 23 A. Yes. To my knowledge. 24 (Exhibit 467 marked for identification.) 25 ////</p> <p style="text-align: right;">Page 332</p>	<p>1 Q. From the first page of Exhibit 467, do you 2 have any reason to doubt that this is an IEEE 3 standard? 4 MR. NEUKOM: Objection. Vague. Calls for 5 opinion testimony. And lack of foundation. 6 THE WITNESS: I'm willing to accept the 7 assertion that it's an IEEE standard. 8 BY MR. WONG: 9 Q. Had you ever reviewed the ANSI/IEEE 10 standard 802.1D 1998 edition? 11 A. I have never reviewed the 1998 edition of 12 IEEE 802.1D. 13 Q. Have you ever reviewed any other editions 14 of 802.1D? 15 A. A much earlier version. 16 Q. In that much earlier -- you can set that 17 down, Mr. Lougheed. 18 In that earlier version of 802.1D, do you 19 recall whether the standard used the term "spanning 20 tree"? 21 MR. NEUKOM: Objection. Vague. I'm 22 pretty sure if that document uses the word 23 "standard" the way the document before uses the word 24 "standard," the document presupposes a 25 mischaracterization of the document.</p> <p style="text-align: right;">Page 334</p>

<p>1 BY MR. WONG: 2 Q. Please answer. 3 A. What's your question again? 4 Q. Sure. In the earlier version of the 5 802.1D standard that you have reviewed -- strike 6 that. 7 You just testified that you had reviewed 8 an earlier version of the 802.1D standard earlier 9 than the 1998 edition, right? 10 A. Right. 11 Q. And do you recall approximately what year 12 that version of the 802.1D standard was? 13 A. Not the year. The year I would have 14 reviewed something like that would have been '87 or 15 '88. 16 Q. And in your review of that version of the 17 802.1D standard that you would have reviewed in 1987 18 or '88, do you recall whether the word "spanning 19 tree" existed in that document? 20 A. No, I don't recall if that word appeared 21 there. 22 Q. But when you came up with the "show 23 spanning-tree" command for Cisco IOS, had you heard 24 of the term "spanning tree" before that? 25 A. Yes, I had.</p> <p style="text-align: right;">Page 335</p>	<p>1 MR. NEUKOM: Objection. Calls for opinion 2 testimony. 3 THE WITNESS: I don't understand what you 4 mean by the word "creative." 5 BY MR. WONG: 6 Q. Do you believe that it took any degree of 7 creativity to come up with the command "show 8 spanning-tree"? 9 MR. NEUKOM: Same objection. Calls for 10 opinion testimony. Also calls for a legal 11 conclusion. 12 But notwithstanding my objections, you 13 should still try to answer these questions to the 14 best of your ability. 15 THE WITNESS: And the question is? 16 BY MR. WONG: 17 Q. Do you believe that it took any creativity 18 to come up with the command "show spanning-tree"? 19 A. I do believe that it shows a degree of 20 creativity. 21 Q. And describe -- go ahead. 22 A. I mean -- 23 Q. Were you done with your answer? 24 A. Yes. 25 Q. And what is creative about the command</p> <p style="text-align: right;">Page 337</p>
<p>1 Q. And why did you choose to put a hyphen 2 between the words "spanning" and "tree"? 3 A. Because I like English phrases and I like 4 separating them with dashes. 5 Q. Why did you -- 6 A. And I saw -- go ahead. 7 Q. No, no. I interrupted you, Mr. Loughheed. 8 Go ahead. 9 A. And I had no concept or no belief at the 10 time that I would need to turn that into a 11 hierarchy. 12 Q. And when you say -- refer to a need to 13 turn it into a hierarchy, are you referring to the 14 option of using a space instead of a hyphen in 15 between the word "spanning" and "tree"? 16 A. Yes. 17 Q. How long did it take for you to come up 18 with the command "show spanning-tree," the syntax? 19 A. The syntax? , Once I had the protocol 20 working, wouldn't have been very long. 21 Q. Matter of minutes? 22 A. Less than a day. 23 Q. Do you think the command "show 24 spanning-tree" is creative? 25 A. I don't understand.</p> <p style="text-align: right;">Page 336</p>	<p>1 "show spanning-tree"? 2 MR. NEUKOM: Objection. Calls for a legal 3 conclusion and calls for opinion testimony. 4 THE WITNESS: And I just -- I'm not sure 5 what the hell you mean by "creative." 6 BY MR. WONG: 7 Q. Have you -- do you know what the word 8 "creative" means? 9 What do you understand the word "creative" 10 to mean? The question is, what do you understand 11 the word "creative" to mean? 12 MR. NEUKOM: Objection to form. 13 THE WITNESS: It's the ability to create 14 things. And I was creating a command expression to 15 monitor a piece of complex software. 16 What do you mean by "creative"? 17 BY MR. WONG: 18 Q. I'm going to use your definition of 19 creative here, Mr. Loughheed. Under your definition 20 of "creative," what's creative about the "show 21 spanning-tree" command? 22 MR. NEUKOM: Objection. Calls for opinion 23 testimony and calls for a legal conclusion. 24 THE WITNESS: Writing any piece of 25 software involves some degree of creativity. It may</p> <p style="text-align: right;">Page 338</p>

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<p>1 Q. And actually, if you look on that same 2 page, page 42 of Exhibit 464, the command right 3 above it is "timers basic (RIP)." 4 Do you see that? 5 A. Uh-huh. 6 Q. And you are also the originator of that 7 command, correct? 8 A. Yes. 9 Q. And the date of earliest known document 10 for that command is September 14th, 1989. 11 Do you see that? 12 A. Uh-huh. 13 Q. Is that -- strike that. 14 Did you work on different "timers" 15 commands at the -- roughly the same time period for 16 Cisco IOS? 17 MR. NEUKOM: Objection. Vague and 18 compound. 19 BY MR. WONG: 20 Q. Let me ask specifically, actually, about 21 these. 22 Did you work on the "timers basic" command 23 and the "timers bgp" command at the same time? 24 A. I don't know if it was the same time, but 25 it was certainly in the late '80s.</p> <p style="text-align: right;">Page 343</p>	<p>1 Q. Do you have to -- 2 A. It's either "routing-protocol" or 3 "router." The command form changed in that time 4 frame. But it's the same -- it's the same concept. 5 Q. So just so I understand, Mr. Loughheed, 6 before a user at the command-line interface types in 7 "timers bgp" as a command, before that, the user has 8 to type in a routing protocol command? 9 A. Right. For example, "router bgp." 10 "timers" plus the number, and then you would say, 11 you know, "bgp timers" or timers bgp." 12 Q. Got it. 13 And BGP refers to border gateway protocol, 14 correct? 15 A. Yes. 16 Q. And we discussed border gateway protocol 17 during your first deposition. Remember that? 18 A. That correct. 19 Q. And as the 1989, BGP was already in IETF 20 industry standards, correct? 21 A. No. 22 Q. At what stage was -- strike that. 23 Today BGP is specified in IETF industry 24 standards, correct? 25 A. It is described in an RFC that is a</p> <p style="text-align: right;">Page 345</p>
<p>1 Q. Were there already commands in Cisco IOS 2 at the time you added the "timers bgp" command where 3 the first token was the word "timers"? 4 A. Yes. 5 Q. What existing commands were present in 6 Cisco IOS that started with the first token of 7 "timers" when you added the "timers bgp" command? 8 A. They were all -- they were all subcommands 9 of the "routing" protocol command. They were -- 10 that was the only -- the only domain that was -- the 11 "timers" command at that time was for routing -- 12 adjusting timers for routing protocols. 13 Q. And just so I can understand, when you say 14 they were all subcommands of the "routing-protocol" 15 command, what is the "routing-protocol" command? 16 A. These days, it would be the "router" 17 command. And the "router" command -- it's a command 18 mode where you say "router," then the name on the 19 routing protocol, like "IGRP" or "RIP" or "BGP." 20 And then you would -- on subsequent lines, you would 21 give command expressions that would tweak stuff that 22 is specific to that particular protocol. 23 Q. So was the "timers bgp" command a 24 subcommand of the "routing-protocol" command? 25 A. Yes.</p> <p style="text-align: right;">Page 344</p>	<p>1 standard -- what the IETF calls a standard, yes. 2 Q. So as of the time that the timers BGP 3 proto- -- strike that. 4 At the time that the timers BGP command 5 was added to Cisco IOS, at what stage was the BGP 6 standardization process in the IETF, to your 7 knowledge. 8 A. Yakov Rekhter and I came up with the very 9 first version of BGP in January of 1989, wrote an 10 RFC describing it. And there were other 11 implementations that were starting to pop up after 12 we did the first couple of RFCs. I don't 13 remember -- Yakov Rekhter was the person who handled 14 the standards process within the IETF. 15 Q. Do you remember the RFC number of the 16 first BGP RFC? 17 A. I believe it was 1105. 18 [REDACTED] 19 [REDACTED] 20 [REDACTED] 21 [REDACTED] 22 [REDACTED] 23 [REDACTED] 24 [REDACTED] 25 [REDACTED]</p> <p style="text-align: right;">Page 346</p>

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47 (Pages 371 - 374)

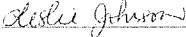
<p>1 A. Correct.</p> <p>2 [REDACTED]</p> <p>3 [REDACTED]</p> <p>4 [REDACTED]</p> <p>5 [REDACTED]</p> <p>6 [REDACTED]</p> <p>7 [REDACTED]</p> <p>8 [REDACTED]</p> <p>9 [REDACTED]</p> <p>10 [REDACTED]</p> <p>11 [REDACTED]</p> <p>12 [REDACTED]</p> <p>13 [REDACTED]</p> <p>14 [REDACTED]</p> <p>15 [REDACTED]</p> <p>16 [REDACTED]</p> <p>17 [REDACTED]</p> <p>18 [REDACTED]</p> <p>19 [REDACTED]</p> <p>20 [REDACTED]</p> <p>21 [REDACTED]</p> <p>22 [REDACTED]</p> <p>23 [REDACTED]</p> <p>24 [REDACTED]</p> <p>25 [REDACTED]</p> <p style="text-align: right;">Page 379</p>	<p>1 hierarchy of commands that are used in that command</p> <p>2 mode.</p> <p>3 Q. Okay. Well, my question is, did you</p> <p>4 create the "user exec" command mode in Cisco IOS?</p> <p>5 MR. NEUKOM: Objection. Asked and</p> <p>6 answered.</p> <p>7 THE WITNESS: I'm sorry. The question</p> <p>8 again is?</p> <p>9 BY MR. WONG:</p> <p>10 Q. Did you create the "user exec" command</p> <p>11 mode in Cisco IOS?</p> <p>12 MR. NEUKOM: Objection. Asked and</p> <p>13 answered.</p> <p>14 THE WITNESS: I was the person responsible</p> <p>15 for the look and feel of the "exec" command mode.</p> <p>16 BY MR. WONG:</p> <p>17 Q. But when you say "exec" command mode, is</p> <p>18 that the same thing as the "user exec" command mode?</p> <p>19 A. Yes. I think we're talking about the same</p> <p>20 thing.</p> <p>21 Q. I think we are too.</p> <p>22 Is there a "privilege exec" command mode</p> <p>23 in Cisco IOS?</p> <p>24 A. Yes.</p> <p>25 Q. And what is the difference between the</p> <p style="text-align: right;">Page 381</p>
<p>1 BY MR. WONG:</p> <p>2 Q. You can set that aside.</p> <p>3 Mr. Lougheed, after your first deposition,</p> <p>4 Cisco identified you a few days later as the creator</p> <p>5 of the command modes and prompts at issue in this</p> <p>6 litigation. Are you aware of that?</p> <p>7 A. Yes.</p> <p>8 Q. Are you the creator of the command modes</p> <p>9 and prompts at issue in this litigation?</p> <p>10 MR. NEUKOM: Objection. Compound.</p> <p>11 BY MR. WONG:</p> <p>12 Q. Let me go one by one then, Mr. Lougheed.</p> <p>13 A. Okay.</p> <p>14 Q. Are you familiar with the "user exec"</p> <p>15 command mode?</p> <p>16 A. In what piece of software?</p> <p>17 Q. Cisco IOS.</p> <p>18 A. Yes.</p> <p>19 Q. And what is the "user exec" command mode</p> <p>20 in Cisco IOS?</p> <p>21 A. It's the set of interactive commands for</p> <p>22 maintaining and monitoring the software.</p> <p>23 Q. And did you create the "user exec" command</p> <p>24 mode in Cisco IOS?</p> <p>25 A. I created many of the commands and the</p> <p style="text-align: right;">Page 380</p>	<p>1 "privilege exec" command mode in Cisco IOS and the</p> <p>2 "user exec" command mode in Cisco IOS?</p> <p>3 A. The one is a subset of the other.</p> <p>4 Q. Which one is a subset of the other?</p> <p>5 A. The "user" command mode.</p> <p>6 Q. And are you the creator of the "privilege</p> <p>7 exec" command mode in Cisco IOS?</p> <p>8 A. I base that ultimately on Mr. Yaeger's</p> <p>9 work.</p> <p>10 Q. Is that the end of your answer?</p> <p>11 A. Yes.</p> <p>12 Q. I just wanted to make sure that you</p> <p>13 weren't going to say something else.</p> <p>14 A. Okay.</p> <p>15 Q. Is there a "global configuration" command</p> <p>16 mode in Cisco IOS?</p> <p>17 A. Yes.</p> <p>18 Q. What is the "global configuration" command</p> <p>19 mode in Cisco IOS?</p> <p>20 A. It's a set of configuration commands that</p> <p>21 apply to the entire box.</p> <p>22 Q. And did you create the "global</p> <p>23 configuration" command mode in Cisco IOS?</p> <p>24 A. Yes.</p> <p>25 Q. When did you create the "global</p> <p style="text-align: right;">Page 382</p>

<p>1 configuration" command mode in Cisco IOS?</p> <p>2 A. In the 1985, 1986 time frame.</p> <p>3 Q. And why do you say the 1985, 1986 time</p> <p>4 frame?</p> <p>5 A. Because that's -- I don't have any further</p> <p>6 precision.</p> <p>7 Q. Let's mark this as the next exhibit. I'm</p> <p>8 sorry. What number are we on?</p> <p>9 THE REPORTER: 476.</p> <p>10 (Exhibit 476 marked for identification.)</p> <p>11 BY MR. WONG:</p> <p>12 Q. The court reporter has marked Exhibit 476</p> <p>13 a document bearing control numbers CSI-CLI-00358622</p> <p>14 to 358654.</p> <p>15 Mr. Loughheed, before I ask you about this</p> <p>16 document, this is a document that Cisco has</p> <p>17 identified to Arista as the first documentation of</p> <p>18 the command modes and prompts at issue in this case.</p> <p>19 So you know, whether that's true or not, I don't</p> <p>20 know, but I'm just representing to you that that is</p> <p>21 what Cisco has represented to us in discovery.</p> <p>22 Can you please take a look at Exhibit 476</p> <p>23 and let me know if you recognize Exhibit 476.</p> <p>24 A. Yes, I recognize it.</p> <p>25 Q. And what is Exhibit 476?</p> <p style="text-align: right;">Page 383</p>	<p>1 BY MR. WONG:</p> <p>2 Q. I'll go one by one then.</p> <p>3 Mr. Loughheed, do you --</p> <p>4 MR. NEUKOM: Why? I don't mean to be a</p> <p>5 pain, but it's 4:20 in the afternoon. This witness</p> <p>6 is on his second day of deposition. If it's in</p> <p>7 there, you can show it at trial. If it is or it</p> <p>8 isn't, we're keeping Mr. Loughheed here so that you</p> <p>9 can walk him through to have him admit the contents</p> <p>10 of a document or not.</p> <p>11 MR. WONG: Okay.</p> <p>12 MR. NEUKOM: It just seems a little bit of</p> <p>13 a pain for this witness who is being very</p> <p>14 cooperative.</p> <p>15 MR. WONG: Let's move on to the "interface</p> <p>16 configuration" command mode.</p> <p>17 BY MR. WONG:</p> <p>18 Q. Mr. Loughheed, do you know what the</p> <p>19 "interface configuration" command mode is?</p> <p>20 A. Yes.</p> <p>21 Q. What is the "interface configuration"</p> <p>22 command mode?</p> <p>23 A. It is a -- it's a mode entered by the --</p> <p>24 starts out with the command interface, specifies the</p> <p>25 name of the interface, and then on subsequent lines</p> <p style="text-align: right;">Page 385</p>
<p>1 A. It's the first -- it's the first user</p> <p>2 manual for the Cisco software.</p> <p>3 Q. Okay. And was the user manual in --</p> <p>4 strike that.</p> <p>5 So this -- Exhibit 476 says "Version 5.2,"</p> <p>6 correct?</p> <p>7 A. Correct.</p> <p>8 Q. Was that the first version of Cisco's</p> <p>9 ASM/AGS software that was sold to the public?</p> <p>10 A. Yes.</p> <p>11 Q. And was the user manual and configuration</p> <p>12 guide for the Cisco Systems ASM/AGS marked here as</p> <p>13 Exhibit 476 provided to customers of Cisco?</p> <p>14 MR. NEUKOM: Objection. Lack of</p> <p>15 foundation.</p> <p>16 THE WITNESS: We shipped a copy with each</p> <p>17 of the earlier units.</p> <p>18 BY MR. WONG:</p> <p>19 Q. And you know that from personal knowledge?</p> <p>20 A. Yes.</p> <p>21 Q. Do you agree, Mr. Loughheed, that the</p> <p>22 command modes that we have been discussing today are</p> <p>23 documented in Exhibit 476?</p> <p>24 MR. NEUKOM: Objection. The document</p> <p>25 speaks for itself. And objection, compound.</p> <p style="text-align: right;">Page 384</p>	<p>1 there are subcommands that refer to the -- there are</p> <p>2 subsequent configuration commands that use that</p> <p>3 first interface as a reference to what -- what</p> <p>4 interface is actually being configured.</p> <p>5 Q. And we're talking about the "interface</p> <p>6 configuration" command mode in Cisco IOS?</p> <p>7 A. In the current Cisco IOS, yes.</p> <p>8 Q. And are you the creator of the "interface</p> <p>9 configuration" command mode in Cisco IOS?</p> <p>10 A. Yes.</p> <p>11 Q. And when was that created?</p> <p>12 A. After I left Stanford.</p> <p>13 Q. Do you know approximately when in terms of</p> <p>14 the year that you created the "interface</p> <p>15 configuration" command mode?</p> <p>16 A. '86, early '87.</p> <p>17 Q. What's the command prompt for the</p> <p>18 "interface configuration" command mode in Cisco IOS?</p> <p>19 A. I don't remember what the modern one is.</p> <p>20 There was none in the early versions.</p> <p>21 Q. And what was the command prompt for the</p> <p>22 "exec" or "user exec" command mode for Cisco IOS?</p> <p>23 A. The name of the host. If it didn't -- if</p> <p>24 there was -- either gateway angle bracket, which was</p> <p>25 the default, or if it could figure out its host</p> <p style="text-align: right;">Page 386</p>

<p>1 name, it would have the host name and an angle 2 bracket. 3 Q. And was the angle bracket also the prompt 4 used -- strike that. 5 Was the angle bracket also a prompt used 6 in the EE-CF software at Stanford? 7 A. Yes. 8 Q. Do you know if the angle bracket was used 9 in the SUMEX software at Stanford? 10 A. I don't recall. 11 Q. If you open up Exhibit 36, Mr. Loughheed. 12 A. Okay. 36? 13 Q. Yes, Exhibit 36. It's a manual. It's the 14 manual we were just looking at. Or actually not. 15 It's a different manual. 16 A. No. It documents -- no. They're 17 different manuals. 18 Q. Yes. I'm sorry. If you have Exhibit 36, 19 that's fine. 20 A. Yes, I've got it. 21 Q. But I meant Exhibit 476. I'm confusing 22 myself now. 23 A. Okay. 24 Q. If you turn to page 2 of Exhibit 476. Let 25 me know when you're there.</p> <p style="text-align: right;">Page 387</p>	<p>1 A. Yes. 2 Q. Now, the next line says, "Sierra is the 3 name of the time-sharing computer." 4 Do you see that? 5 A. Yes. 6 Q. That Sierra is referring to the same 7 Sierra that's used at Stanford, correct? 8 A. In this context, Sierra is referring to a 9 generic time-sharing computer. 10 Q. Can you open up Exhibit 36, please, 11 Mr. Loughheed? And you can stay on that page of 12 Exhibit 476. But if you open up Exhibit 36 to 13 page 2. And the control number at the bottom is 14 CSI-CLI-01315527. Let me know when you're there. 15 A. I'm there. 16 Q. Under section 2-1, "Basic Ethertip Use," 17 do you see where I'm looking? 18 A. Uh-huh. 19 Q. It says, "To get the attention of the 20 EtherTIP's command processor, you must press the 21 return key. A message may be printed out, followed 22 by the EtherTIP's name. The EtherTIP is then ready 23 to accept commands. See Figure 2-1. Words in 24 boldface are typed by the user; normal type is 25 printed by the EtherTIP; and italics are comments."</p> <p style="text-align: right;">Page 389</p>
<p>1 A. Page 2 as in the documents, internal 2 documents? 3 Q. Yes. I'm sorry. And the control number at 4 the bottom of page 2 of Exhibit 476 is CSI-CLI 5 00358625. Are you there? 6 A. I'm there. 7 Q. Do you see a section called "2.1 Basic ASM 8 Use"? 9 A. Yes, I see that section. 10 Q. And the first sentence there says, "To get 11 the attention of the ASM's command processor, you 12 must press the return key." 13 Did I read that correctly? 14 A. Yes. 15 Q. The next sentence says, "A message must be 16 printed out, followed by the ASM's host name." 17 Did I read that correctly? 18 MR. NEUKOM: We'll stipulate to that. 19 BY MR. WONG: 20 Q. And the rest of the paragraph reads, "The 21 ASM is then ready to accept commands. See Figure 22 2-1. Words in boldface are typed by the user; 23 normal type is printed by the ASM; and italics are 24 comments." 25 Did I read that correctly?</p> <p style="text-align: right;">Page 388</p>	<p>1 Do you see that? 2 A. Yes. 3 Q. Now, that sounds like the same text that's 4 in section 2.1 of the Cisco Systems ASM/AGS User 5 Manual and Configuration Guide marked as 6 Exhibit 476. Is that right? 7 MR. NEUKOM: Objection. Mischaracterizes 8 the document. 9 THE WITNESS: Ask the question again. I'm 10 sorry. 11 BY MR. WONG: 12 Q. The text that appears in the first 13 paragraph under section 2.1 of the Stanford EtherTIP 14 User Guide marked as Exhibit 36 is substantially the 15 same as the text that appears under section 2.1 of 16 the Cisco Systems ASM/AGS User Manual marked as 17 Exhibit 476; isn't that right? 18 MR. NEUKOM: Objection. Documents speak 19 for themselves. 20 THE WITNESS: I agree with your 21 observation. 22 BY MR. WONG: 23 Q. You agree with whose observation? 24 A. I was trying to answer your question. 25 Q. Oh. Thank you, Mr. Loughheed.</p> <p style="text-align: right;">Page 390</p>

<p>1 The same page, you see Figure 2-1: 2 "Example EtherTIP Session" in Exhibit 36, correct? 3 A. Uh-huh. 4 Q. The first sentence underneath that says -- 5 and I'm looking at Exhibit 36. On page 2 of the 6 document, it says, "After you have a prompt, the 7 most common action is to type in the name of the 8 host to which you wish to connect and press the 9 return key." Right? 10 A. Yeah. 11 Q. If you look under Figure 2-1 in the Cisco 12 Systems ASM/AGS User Manual, which is Exhibit 476 on 13 page 2, it says, "After you have a prompt, the most 14 common action is to type in the name of the host to 15 which you wish to connect and press the return key." 16 Do you see that? 17 A. Uh-huh. 18 Q. Now, that's the exact same sentence, 19 correct? 20 A. Correct. 21 Q. Why did Cisco copy from the Stanford 22 EtherTIP User Guide marked as Exhibit 36 to create 23 its ASM/AGS User Manual marked as Exhibit 476? 24 A. I didn't have the time to go and change 25 all the documentation that I had written at</p> <p style="text-align: right;">Page 391</p>	<p>1 THE WITNESS: Would you repeat the 2 question. 3 BY MR. WONG: 4 Q. Would you agree, Mr. Lougheed, that two 5 sentences are exactly the same in Exhibit 36, which 6 is the Stanford User Guide and Exhibit 476, which is 7 the Cisco User Manual, that those sentences were 8 copied by Cisco directly from the Stanford EtherTIP 9 User Guide? 10 MR. NEUKOM: Objection. Vague. Compound. 11 Calls for a legal conclusion. Calls for speculation 12 and opinion. 13 THE WITNESS: Given that I'm the author of 14 both documents, it's not surprising that I would 15 reuse my words in these two documents. 16 BY MR. WONG: 17 Q. And just so I have one example, 18 Mr. Lougheed, just to address counsel's objection, 19 in Exhibit 36, on the page with the control number 20 at the bottom of 1315527, the second paragraph from 21 the bottom. Are you there? It starts -- 22 A. "You may have more than one connection." 23 Q. Yes. Can you read that please, that one 24 sentence? 25 I'm sorry. Can you read that aloud,</p> <p style="text-align: right;">Page 393</p>
<p>1 Stanford. 2 Q. Are there other similarities between the 3 two documents that you're aware of, Mr. Lougheed? 4 Let me ask it a different way. 5 How much of the Stanford EtherTIP/Gateway 6 User and Configuration Guide marked as Exhibit 36 7 did Cisco copy to create the Cisco Systems ASM/AGS 8 User Manual and Configuration Guide marked as 9 Exhibit 476? 10 MR. NEUKOM: Objection. Lack of 11 foundation. 12 THE WITNESS: I was the author of both 13 documents. I don't remember in quantifiable detail 14 how much I retained and how much I added. I'm sure 15 both documents could be compared. 16 BY MR. WONG: 17 Q. And would you agree, Mr. Lougheed, that if 18 two sentences are exactly the same in Exhibit 36, 19 which is the Stanford guide, and Exhibit 476, which 20 is the Cisco User Manual, that those sentences were 21 copied by Cisco from the Stanford EtherTIP User 22 Guide? 23 MR. NEUKOM: Objection. Vague. 24 Speculative and hypothetical. Also calls for 25 opinion testimony.</p> <p style="text-align: right;">Page 392</p>	<p>1 please, that one sentence starting with "You may 2 have more than one connection." 3 A. This is Stanford stuff, yes. 4 "You may have more than one connection at 5 a time and switch back and forth between them. To 6 do this, get back to the EXEC by typing the escape 7 sequence, usually control up arrow or control arrow 8 followed by X." 9 Q. You can stop there, Mr. Lougheed. 10 Can you now look at Exhibit 476? And 11 Exhibit 476 is the Cisco Systems ASM/AGS User Manual 12 and Configuration Guide, Version 5.2, correct? 13 A. Yes. 14 Q. And this was provided to Cisco customers 15 when they purchased Cisco products, correct? 16 A. Yes. 17 Q. Can you please read the first two 18 sentences in the last paragraph shown on the page 19 ending in Bates Nos. 358625? 20 A. "You may have" -- "You may have more than 21 one connection at a time and switch between -- and 22 switch back and forth between them. To do this, get 23 back to the EXEC by typing the escape sequence, 24 usually control up arrow followed by X. See the" -- 25 Q. And that's the -- that's fine right there,</p> <p style="text-align: right;">Page 394</p>

<p>1 Mr. Loughheed.</p> <p>2 Now, those two sentences that you read</p> <p>3 from the Stanford Ethertip User Guide marked as</p> <p>4 Exhibit 36 and the Cisco Systems ASM/AGS User Manual</p> <p>5 marked as Exhibit 476 are exactly the same, correct?</p> <p>6 A. Yes, I wrote both sentences.</p> <p>7 Q. And so Cisco copied those two sentences</p> <p>8 from the Stanford guide marked as Exhibit 36 and put</p> <p>9 them into the Cisco guide marked as Exhibit 476,</p> <p>10 correct?</p> <p>11 MR. NEUKOM: Objection. Asked and</p> <p>12 answered a couple times now.</p> <p>13 MR. WONG: I'm asking about those two</p> <p>14 particular sentences.</p> <p>15 MR. NEUKOM: Yeah. And before you asked a</p> <p>16 blanket question and you didn't like his answer,</p> <p>17 which I thought was a pretty darn good one. So you</p> <p>18 decided to just keep him in the room --</p> <p>19 MR. WONG: Counsel.</p> <p>20 MR. NEUKOM: Look, you responded to my</p> <p>21 objection. You wanted to engage me. So I'll</p> <p>22 explain my objection. If you don't want me piping</p> <p>23 up, that's fine. Just let me make objections for</p> <p>24 the record.</p> <p>25 Now you're asking him the exact same</p> <p style="text-align: right;">Page 395</p>	<p>1 MR. WONG: I think it's our understanding</p> <p>2 that all witnesses can have 30 days or something.</p> <p>3 MR. NEUKOM: By stipulation.</p> <p>4 MR. WONG: Great.</p> <p>5 THE VIDEOGRAPHER: This concludes today's</p> <p>6 videotaped deposition of Mr. Kirk Loughheed. We're</p> <p>7 off the record at 4:37 p.m.</p> <p>8 (TIME NOTED: 4:37 P.M.)</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p style="text-align: right;">Page 397</p>
<p>1 question after having had the fourth employee of</p> <p>2 Cisco, Mr. Loughheed, who is now here at almost 5:00</p> <p>3 reading aloud from documents. And you asked him the</p> <p>4 same question again to see if you can get a</p> <p>5 different answer. So go for it. This is starting</p> <p>6 to feel increasingly not very respectful of this</p> <p>7 witness's time.</p> <p>8 BY MR. WONG:</p> <p>9 Q. Do you want me to read the question again?</p> <p>10 I'll read the question again.</p> <p>11 A. That would be fine.</p> <p>12 Q. Cisco copied those two sentences that you</p> <p>13 just read aloud into the record for its user manual</p> <p>14 marked as Exhibit 476 from the Stanford user manual</p> <p>15 marked as Exhibit 36, correct?</p> <p>16 A. I wrote both manuals.</p> <p>17 MR. WONG: I have no further questions.</p> <p>18 THE VIDEOGRAPHER: This concludes today's</p> <p>19 videotaped deposition of Mr. Kirk --</p> <p>20 MR. NEUKOM: Oh, I'm sorry to interrupt.</p> <p>21 On behalf of Mr. Loughheed, he reserves the</p> <p>22 right to review an errata of the transcript. I</p> <p>23 don't know, Ryan, if we've been doing this by</p> <p>24 stipulation for all witnesses, even if it's not put</p> <p>25 on the record.</p> <p style="text-align: right;">Page 396</p>	<p>1 DECLARATION UNDER PENALTY OF PERJURY</p> <p>2</p> <p>3 I, KIRK LOUGHEED, the witness herein,</p> <p>4 declare under penalty of perjury that I have read the</p> <p>5 foregoing in its entirety; and that the testimony</p> <p>6 contained therein, as corrected by me, is a true and</p> <p>7 accurate transcription of my testimony elicited at said</p> <p>8 time and place.</p> <p>9</p> <p>10 Executed this _____ day of _____ 2016, at</p> <p>11 _____</p> <p>12 (City) (State)</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17 _____</p> <p>18 KIRK LOUGHEED</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p style="text-align: right;">Page 398</p>

<p>1 REPORTER'S CERTIFICATION</p> <p>2 I, Leslie Johnson, a Certified Shorthand</p> <p>3 Reporter of the State of California, do hereby certify:</p> <p>4 That the foregoing proceedings were taken</p> <p>5 before me at the time and place herein set forth; that</p> <p>6 any witnesses in the foregoing proceedings, prior to</p> <p>7 testifying, were administered an oath; that a record of</p> <p>8 the proceedings was made by me using machine shorthand</p> <p>9 which was thereafter transcribed under my direction:</p> <p>10 that the foregoing transcript is a true record of the</p> <p>11 testimony given.</p> <p>12 Further, that if the foregoing pertains to</p> <p>13 the original transcript of a deposition in a Federal</p> <p>14 Case, before completion of the proceedings, review</p> <p>15 of the transcript [] was [] was not requested.</p> <p>16 I further certify I am neither financially interested in</p> <p>17 the action nor a relative or employee of any attorney or</p> <p>18 any party to this action.</p> <p>19 IN WITNESS WHEREOF, I have this date</p> <p>20 subscribed my name.</p> <p>21 Dated: April 19, 2016</p> <p>22</p> <p>23 </p> <p>24 LESLIE JOHNSON</p> <p>25 CSR No. 11451, RPR, CCRR</p> <p>Page 399</p>	

